



Course ID: H00124	Course name: MATHEMATICS II		
Cycle: FIRST	Year: FIRST	Semester: II	ECTS credits:4
Course status: MANDATORY		Total course hours: 60 Lectures: 30 Laboratory: 30	
Teaching participants:	Teachers and associates with expertise in the field to which the subject belongs [do not enter names in this section. Leave the wording as indicated in this section]		
Prerequisite for enrollment:	-		
Course aims:	Introducing students to elementary calculus		
Thematic course units:	<ol style="list-style-type: none">1. Limit value of a function of one variable.2. Continuity of the function.3. Derivation of the function. Basic rules.4. L' Hospital Rule.5. Examination of functions using derivatives (monotony, extreme values, asymptotes)6. Draw a graph of the function.7. Definition of indefinite integral. Main properties. Table of basic integrals.8. Basic methods of integration.9. Integration of rational functions.10. Integration of irrational functions.11. Integration of trigonometric functions.12. Definition and main properties of a definite integral.13. Application of a definite integral to calculate the area of in a plane figures.		

	14. Application of a definite integral to calculate the area and volume of a body. 15. Bernoulli's differential equation																					
Learning outcomes:	Knowledge: The student acquires knowledge from differential and integral calculus Skills: Understanding the elements of mathematics analysis Competences: Application of mathematics in chemistry																					
Teaching methodology:	Multimedia presentation. Mathematical software																					
Assessment methods and grading system¹:	Grading criteria																					
	<table border="1"> <thead> <tr> <th>Criteria</th> <th>Maximal score</th> <th>Required score</th> </tr> </thead> <tbody> <tr> <td>1. Class attendance</td> <td>5</td> <td>3</td> </tr> <tr> <td>2. Class activities</td> <td>5</td> <td>2</td> </tr> <tr> <td>3. Midterms</td> <td>2 × 25</td> <td>2 × 14</td> </tr> <tr> <td>4. Final exam</td> <td>40</td> <td>22</td> </tr> <tr> <td>Total</td> <td>100</td> <td>55</td> </tr> </tbody> </table>	Criteria	Maximal score	Required score	1. Class attendance	5	3	2. Class activities	5	2	3. Midterms	2 × 25	2 × 14	4. Final exam	40	22	Total	100	55			
	Criteria	Maximal score	Required score																			
	1. Class attendance	5	3																			
	2. Class activities	5	2																			
	3. Midterms	2 × 25	2 × 14																			
	4. Final exam	40	22																			
	Total	100	55																			
	Scores and grading																					
	<table border="1"> <thead> <tr> <th>Score</th> <th>Grade (B&H)</th> <th>Grade (ECTS)</th> </tr> </thead> <tbody> <tr> <td>< 55</td> <td>5</td> <td>F, FX</td> </tr> <tr> <td>55–64</td> <td>6</td> <td>E</td> </tr> <tr> <td>65–74</td> <td>7</td> <td>D</td> </tr> <tr> <td>75–84</td> <td>8</td> <td>C</td> </tr> <tr> <td>85–94</td> <td>9</td> <td>B</td> </tr> <tr> <td>95–100</td> <td>10</td> <td>A</td> </tr> </tbody> </table>	Score	Grade (B&H)	Grade (ECTS)	< 55	5	F, FX	55–64	6	E	65–74	7	D	75–84	8	C	85–94	9	B	95–100	10	A
	Score	Grade (B&H)	Grade (ECTS)																			
< 55	5	F, FX																				
55–64	6	E																				
65–74	7	D																				
75–84	8	C																				
85–94	9	B																				
95–100	10	A																				
Literature²:	Mandatory literature: 1. Demidovič BP. Problems and solved examples from higher mathematics.																					

¹The grading structure for each subject is determined by the Council of the organizational unit before the beginning of the academic year in which the subject is taught as per Article 64, paragraph 6 of the Law on Higher Education of Sarajevo Canton

²The Senate of the higher education institution, as an institution, or the Council of the organizational unit of the higher education institution, as a public institution, determines by a special decision, which is published on its website before the beginning of the academic year obligatory, mandatory and recommended textbooks and manuals, as well as other recommended literature based on which exams are prepared and taken as per Article 56, paragraph 3 of the Law on Higher Education of the Sarajevo Canton

2. Ayres FJR, Mendelson E. Differential and Integral Calculus. Schaum's Outline Series; McGraw-Hill: 1990.

Supplementary literature:

1. Courant R. Differential and Integral Calculus, Volume 1. 2nd ed. McShane EJ, translator, USA: John Wiley and Sons; 1988.